What is claimed is:

1. A three-dimensional input apparatus for generating data specifying the shape of an object by receiving light from said object, comprising:

a projector for irradiating a detection light beam toward said object so as to scan a virtual surface;

an image sensing device for receiving light reflected from said object; and

a controller for making said image sensing device output thinned-out data in a direction corresponding to the main scanning direction on said virtual surface.

2. An apparatus according to claim 1,

wherein said image sensing device includes a plurality of light-receiving elements in a predetermined arrangement for outputting a light-receiving signal from an arbitrary one of said light-receiving elements.

3. An apparatus according to claim 1,

wherein said controller has a plurality of thin-out modes of different ratios in which the output of said image sensing device is thinned out.

4. An apparatus according to claim 3,

wherein one of said plurality of thin-out modes is zero in thin-out ratio.

5. An apparatus according to claim 1,

wherein said projector irradiates a slit-like light.

6. A three-dimensional input apparatus comprising:

a projector for irradiating a detection light beam on an object;

a scanning mechanism for scanning said object by

deflecting the direction of irradiation of said detection light beam;

an image sensing device having a two-dimensional image sensing surface, for receiving said detection light beam reflected on said object; and

a controller for controlling said image sensing device such that the light-receiving signal is repeatedly read on a line along the direction of movement of said received detection light beam in an effective area constituting a part of said image sensing surface thereby to read the light-receiving signal in said effective area.

7. An apparatus according to claim 6,

wherein upon completion of reading of said effective area, said controller reads as a new effective area an area formed by shifting said effective area by a predetermined amount in said main scanning direction.

8. An apparatus according to claim 6,

wherein said image sensing device is a MOS type image sensor.

9. A method of image sensing control for a three-dimensional measuring system, comprising the steps of:

scanning an object by irradiating a detection light beam on said object and deflecting the direction of irradiation;

receiving said detection light beam reflected on said object by an image sensing device with a two-dimensional image sensing surface; and

repeatedly reading the light-receiving signal on a line along the direction of movement of said received detection light beam in an effective area constituting a part of said

image sensing surface thereby to read the light-receiving signal in said effective area.

10. A method according to claim 9,

wherein in said read step, an area formed by shifting said effective area by a predetermined amount in said scanning direction is read as a new effective area upon completion of reading of said first effective area.

11. A three-dimensional input apparatus comprising:

a projector for irradiating a detection light beam on an object;

a scanning mechanism for scanning said object by deflecting the direction of irradiation of said detection light beam;

an image sensing device with an image sensing surface including a plurality of two-dimensionally arranged light-receiving elements, for receiving the detection light beam reflected on said object; and

a controller for controlling the electric charge accumulation time of said light-receiving elements such that a plurality of types of outputs with different electric charge accumulation times are produced by said light-receiving elements, and selecting non-saturated signals among said plurality of types of output signals.

12. An apparatus according to claim 11,

wherein said controller controls said image sensing device so as to output a signal corresponding to the accumulated electric charge upon lapse of a first accumulation time and continue to accumulate electric charge while maintaining said accumulated electric charge until a second charge accumulation time.

13. An apparatus according to claim 12,

wherein said controller selects among said non-saturated signals one having a long electric charge accumulation time.

14. An apparatus according to claim 11,

wherein said controller selects among said non-saturated signals one having a long electric charge accumulation time.

15. A three-dimensional input apparatus comprising:

a projector for irradiating a detection light beam on an object;

a scanning mechanism for scanning said object by deflecting the direction of irradiation of said detection light beam;

an image sensing device having an image sensing surface including a plurality of two-dimensionally arranged light-receiving elements for receiving the detection light beam reflected on said object;

a controller for controlling said image sensing device so as to output a first signal due to a first electric charge accumulation time and a second signal due to a second electric charge accumulation time equal to a predetermined multiple of said first signal during the electric charge accumulation of said image sensing device; and

a processor for performing calculations using said second signal in the case where said second signal has not been saturated and using a signal of a size equal to said predetermined multiple of said first signal in the case where said second signal has been saturated.

16. A three-dimensional input apparatus comprising:

a projector for irradiating a detection light beam on an object;

a scanning mechanism for scanning said object by deflecting the direction of irradiation of said detection light beam;

an image sensing device having an image sensing surface including a plurality of two-dimensionally arranged light-receiving elements for receiving the detection light beam reflected on said object to be allowed to read an arbitrary range selectively; and

a controller for estimating an area of said light-receiving surface on which a detection light beam reflected on said object is incident and setting the read range of said image sensing device in accordance with the size of said estimated area.

17. An apparatus according to claim 16,

wherein said controller has a first operation mode for reading a range corresponding to the size of said estimated area and a second operation mode for reading a predetermined range regardless of the size of the area on which said detection light beam is incident.

18. An apparatus according to claim 16,

wherein said controller controls the operation of said scanning mechanism in accordance with the size of the area of said light-receiving surface on which said detection light beam reflected on said object is incident.

19. An apparatus according to claim 18,

wherein said controller changes at least one of the scanning range and the scanning rate of the detection light

beam.

20. A three-dimensional input apparatus comprising:

a projector for irradiating a detection light beam on an object;

a scanning mechanism for scanning said object by deflecting the direction of irradiation of said detection light beam;

an image sensing device having an image sensing surface including a plurality of two-dimensionally arranged light-receiving elements for receiving the detection light beam reflected on said object to be allowed to read an arbitrary range selectively; and

a controller for setting the read range of said image sensing device.

21. An apparatus according to claim 20,

wherein said controller sets the read range of said image sensing device in response to a specified operation input.

22. An apparatus according to claim 20,

wherein said controller controls the operation of said scanning mechanism in accordance with the size of the area of said light-receiving surface on which the detection light beam reflected on said object is incident.

23. An apparatus according to claim 22,

wherein said controller changes at least one of the scanning range and the scanning rate of said detection light beam.